Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended) An internet protocol (IP) address managing apparatus, comprising:

a switch unit that searches for an idle IP address among a plurality of IP addresses stored in a database to allocate the idle IP address to an internet connection system; and

an IP service network unit connected to said switch unit and having at least one router for a LAN-to-LAN connection,

wherein said database searches for the idle IP address, under the control of a call processing unit, when said internet connection system requests the call processing control unit allocate the idle IP address.

2.   (Currently Amended) The IP address managing apparatus of claim 1, wherein said switch unit comprises:

a call processing unit that determines if a call requires the idle IP address and performs a call process to said internet connection system when a subscriber attempts the call;

a number translating unit connected with said call processing unit that translates a destination number inputted from the subscriber;

a database connected to said call processing unit to manage the plurality of IP addresses; and

the internet connection system unit connected to said database that requests an IP address allocation for connection with said IP service network unit and returns the IP address allocation to said database when the call is released.

3.   (Original) The IP address managing apparatus of claim 1, wherein each record of the database corresponds to one of the plurality of IP addresses and each record comprises:

fields A, B, C and D that specifically discriminate the corresponding IP address;

a flag indicating a validity or invalidity of the corresponding IP address; and

a use structure that indicates if the corresponding IP address is being used currently.

4.   (Canceled).

5.   (Original) The IP address managing apparatus of claim 2, further comprising

an IP management unit in said call processing unit for managing the plurality of IP addresses

in said database.

6.   (Currently Amended) An apparatus for managing internet protocol (IP)

addresses, comprising:

an IP service network unit having a router for a LAN-to-LAN connection; and

a switch unit that connects a subscriber to said IP service network unit, controls a

call inputted from said subscriber, searches for and allocates an idle IP address in a database

according to an IP address allocation request from an internet connection system, and

returns a currently used IP address to the database and sets the currently used IP address to

be reused, according to an IP return request from said internet connection system,

wherein said database searches for the idle IP address, under the control of a call

processing unit, when said internet connection system requests the call processing control

unit allocate the idle IP address.

7.   (Currently Amended) The apparatus of claim 6, wherein said switch unit

comprises:

a call processing unit that judges if the call requires an IP address to perform a call

process to said internet connection system, when a call connection is attempted by said

subscriber;

a number translating unit connected to said call processing unit that translates a

destination number inputted from said subscriber;

the database connected to said call processing unit that manages the IP address; and

the internet connection system [[unit]] connected to said database that sends the IP

address allocation request to said database and returns the IP address to said database when

the call is released.

8.   (Currently Amended) The apparatus of claim 6, wherein each record of the

database corresponds to one of a plurality of IP addresses and each record comprises:

fields A, B, C and D that specifically discriminate [[the]] a corresponding IP address;

a flag indicating a validity or invalidity of the corresponding IP address; and

a use structure that indicates if the corresponding IP address is being used currently.

9.   (Canceled).

10.   (Currently Amended) An IP address managing method, comprising:

connecting to an internet connection system identified by a destination number;

requesting IP address allocation from a call processing unit for the internet

connection system;

searching for an idle IP address in a database in response to the requested IP address

allocation; and

transmitting the idle IP address to the internet connection system.

11.   (Original) The IP address managing method of claim 10, further comprising

connecting a subscriber to an IP service network.

12.   (Original) The IP address managing method of claim 11, further comprising

requesting a call termination by the subscriber.

13.   (Original) The IP address managing method of claim 12, further comprising:

sending a call release request to the call processing unit from the internet connection

system; and

releasing a call from the internet connection system and the IP service network.

14.   (Original) The IP address managing method of claim 13, further comprising returning the idle IP address to the database, under the control of the call processing unit.

15.   (Original) The IP address managing method of claim 14, wherein a flag and a use of the idle IP address are reset according to an IP address status, when the idle IP address is returned to the database.

16.   (Original) The IP address managing method of claim 15, wherein the flag is set to a value of F and the use is set to a value of No, when the idle IP address is returned to the database due to a fatal error, and the flag is set to a value of T and the use is set to a value of No when the idle IP address is returned for a reason other than the fatal error.

17.   (Original) The IP address managing method of claim 10, wherein an idle IP address list is managed in the database and searched under the control of the call processing unit.

18.   (Original) The IP address managing method of claim 10, wherein the call processing unit has an additional control unit that searches for the idle IP address in the database.

19.   (Original) The IP address managing method of claim 10, wherein the idle IP

address is identified by state values of a flag and a use of the idle IP address.

20.   (Currently Amended) An internet protocol (IP) switching system,

comprising:

a database that stores management information regarding IP addresses assigned to

the switching system; and

a call processor for processing a call from a subscriber and for interconnecting the

subscriber with one of a number of internet connection systems, based on call information

within the call, wherein

the call processor maintains a record of idle IP addresses, which are not allocated,

and active IP addresses, which are allocated to a number of active calls, within the database,

and

the call processor allocates an idle IP address to a requesting subscription unit upon

receiving a request from the subscription unit.

21.   (Original) The switching system of claim 20, further comprising a number

translation unit that translates a number within the call information to an identification of a

corresponding internet connection system, of the number of internet connection systems.

22.   (Currently Amended) The switching system of claim 20, further comprising:

an IP address record, stored in the database, corresponding to each of a number of

IP addresses assigned to the switching system and each IP address record contains a Flag

field and a Use field, wherein

the Flag field is set to a first value indicating invalidity of the corresponding IP

address, if the corresponding IP address is returned to the database due to a fatal error,

the Flag field is set to a second value indicating validity of the corresponding IP

address, if the corresponding IP address is returned without the fatal error,

the Use field is set to a true value, if the corresponding IP address is currently

allocated to an active call, and

the Use field is set to a false value, if the corresponding IP address is not currently

allocated to an active call.

23.   (Original) The switching system of claim 20, wherein the call processor unit

searches the database for the idle IP addresses and assigns one of the idle IP addresses to the

one internet connection system.

24.   (Currently Amended) A method of managing internet protocol (IP) address

allocation in a switching system, comprising:

allocating an idle IP address to an internet connection system when a subscriber

requests access to the internet connection system; [[and]]

indicating in a database record corresponding to the allocated IP address that the

allocated IP address is active;

identifying one of a number of internet connection systems, based on a number

received in call information from the subscriber;

connecting the subscriber and the one internet connection system;

sending an IP address request from the one internet connection system to a database;

and

searching the database, which stores an IP address record for each of a number of IP

addresses assigned to the switching system, for one of a number of idle IP addresses that is

not currently allocated to the number of internet connection systems.

25.   (Original) The method of claim 24, further comprising:

indicating in the corresponding database record that the IP address is idle when

returned by the internet connection system.

26.   (Original) The method of claim 24, further comprising:

identifying one of a number of internet connection systems, based on a number

received in call information from the subscriber;

connecting the subscriber and the one internet connection system; and

sending an IP address request from the one internet connection system to a database.

27.   (Canceled).